



Service
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Model: VA320E

Service Manual

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SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS
AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING
ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all AOC Company Equipment. The service procedures recommended by AOC and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. AOC could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, AOC has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by AOC must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

Hereafter throughout this manual, AOC Company will be referred to as AOC.

WARNING

Use of substitute replacement parts, which do not have the same, specified safety characteristics might create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from AOC. AOC assumes no liability, express or implied, arising out of any unauthorized modification of design.

Servicer assumes all liability.

FOR PRODUCTS CONTAINING LASER:

DANGER-Invisible laser radiations when open AVOID DIRECT EXPOSURE TO BEAM.

CAUTION-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION -The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Take care during handling the LCD module with backlight unit

- Must mount the module using mounting holes arranged in four corners.
- Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
- Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
- Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
- Make certain that treatment person's body is grounded through wristband.
- Do not leave the module in high temperature and in areas of high humidity for a long time.
- Avoid contact with water as it may a short circuit within the module.
- If the surface of panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

1. General Specification

Display panel

Panel Model	: CMO V315B3-LN3
Active Area	: 697.6845(H)* 392.256(V) inch diagonal
Outline Dimension	: 760mm (H) X 450mm (V) X 41.1mm (D)
Pixel Pitch	: 0.17025(H)* 0.51075(V) mm
Pixel Format	: 1366 X 768 (WXGA), RGB strip arrangement
Color Depth	: 8 bit, 16.7M colors
Luminance	: 450Cd/m2, Typ
Backlight	: CCFL
Response Time	: 6.5msec.(Typ. : gray to gray)
Contrast Ratio	: 1500:1(Min.) 2500:1(Typ.)
EEFL MTBF	: 50,000 hrs min.

Power Supply

PSU	: N/A
AC-input	: 100~264 Vac +/-, 50~60Hz
Normal Operation Power consumption	: < 117W (Game mode)
Standby power	: < 1W (120V/60Hz only)
Power cord length	: 1.8M
Power cord type	: 3 lead with earth plug, pluggable (US type)
Power indicator	: LED (On: White, Standby: Amber)

Environmental Conditions

Temperature	: 0°C to 40°C
Humidity	: 10 to 90%(non –condensing)
Altitude	: 0 to 10000 feet
Air pressure	: 700 to 1100 mBAR

Note: recommend at 0 to 35°C, Humidity less than 60 %

2. Operating Instructions

2.1 The Use of Remote Control



POWER:	Press to turn on/off the TV from or to standby mode.
INPUT:	Press to select TV/COMP1/COMP2/AV/HDMI1/HDMI2/HDMI SIDE/VGA
TV:	Press to select TV input
AV:	Press to select AV input
COMP:	Press to select COMPONENT1/ COMPONENT2 input
HDMI:	Press to select HDMI1/HDMI2/HDMI-SIDE input
Number Key:	<ol style="list-style-type: none"> 1. Press number button to direct access to TV channel 2. Press the pass code to activate the factory mode 3. Press to activate the Channel Lock (enter PIN code for Channel lock) 4. If channel list OSD active – jump to that channel in the channel list (not tune the channel until OK is pressed)
- Dot button:	Use the button for digital channels.
LAST:	<ol style="list-style-type: none"> 1. Press to alternate between the currently viewed program and previously viewed program 2. Press to return previous level and exit OSD
INFO:	To display information of TV channel or input source
INPUT:	<ol style="list-style-type: none"> 1. The Source List should be activated and show on OSD. 2. Press repeatedly to select the signal source. 3. 1st press displays current, subsequent presses advance
VOL +/- :	Press to adjust the volume
MUTE :	Interrupt the sound or restore it.
CH +/- :	<ol style="list-style-type: none"> 1. Press to browse channels 2. Press to turn on TV from stand by mode 3. The channel number should appear on the set
MENU/SELECT:	Press to activate OSD menu and activate the setting/selection of OSD
Cursor Key:	<ol style="list-style-type: none"> 1. Press button to navigate OSD menu 2. Cursor right key perform confirmation as well as proceed next level of OSD
PIP:	Function not available
SWAP:	Function not available
EXIT:	Exit OSD
PAUSE:	Function not available
PLAY:	Function not available
STOP:	Function not available

2.2 To Use the Menu

MENU/SELECT - Press to launch the On-Screen Display (OSD) menu. When navigating the OSD, this button is used to select your chosen option.

Arrow Buttons () - After pressing

MENU/SELECT, use arrow buttons to navigate through the OSDs and adjust options, then press **MENU/SELECT** to select your chosen option.

VOL (▲ or ▼) - Press to increase or decrease the speaker volume.

CH (▲ or ▼) - Press to step up or down through the TV channels

MAIN MENU

The OSD consists of several menu options: Picture, Audio, TV, Setup and Parental.

Note: Some of the submenu options may vary depending on your selected input source.



PICTURE ADJUSTMENT

Press the MENU button to activate the On Screen Display (OSD), select the Picture option to adjust the Picture Mode, Backlight, Brightness, Contrast, color, tint, Sharpness, Color Temperature and Advanced Video.



The following options are available in the Picture menu:

Picture Mode

Select Custom, Home, Movie, Game (Sports).

Backlight

Backlight adjusts the overall brilliance of the picture. It does not affect the Brightness (black level) or Contrast (white level) of the picture. If DCR is activated, backlight adjustment is not available.

Brightness

Brightness adjusts the black levels in the picture. If the brightness is too low you will not be able to see the detail in darker parts of the picture and if the brightness is too high the picture will look washed out.

Contrast

Contrast adjusts the white levels in the picture. If the contrast is too low the picture will look washed out and if the contrast is too high you will not be able to see any detail in the bright parts of a picture.

Color

The Color setting adjusts the amount of color in the picture.

Tint

The Tint adjusts the hue of the picture. The easiest way to set tint is to look at flesh tones and adjust for a realistic appearance. In most cases, the default middle position is correct.

Sharpness

The Sharpness setting adjusts the sharpness of the picture.

Color Temperature





Adjust your HDTV color temperature. Adjust Red, Green, and Blue.

Advanced Video

- **DNR** – DNR (Dynamic Noise Reduction) diminishes picture artifacts caused by the digitizing of moving images.
- **Black Level Extender** – Black Level Extender extends grey levels to black to improve contrast.
- **White Peak Limiter** – White Peak Limiter limits excessive white in bright areas of the picture.
- **CTI** – Select CTI (Chrominance Transient Improvement) to reduce time transitioning from one color to another. The effect will be seen as sharpening the border between colors.
- **Flesh Tone** – Adjust flesh tones of the picture. This may result in a more pleasing production of sky and flesh colors.
- **DCR** (Dynamic Contrast Ratio) – DCR (Dynamic Contrast Ratio) automatically adjusts the contrast between brighter and darker scenes. When activated, adjustment of the Backlight is not available.

Audio adjustment

When viewing a DTV / TV or an HDMI, Component, AV, or PC source, the following audio adjustment OSD screens are available when you press **MENU** on the remote control. The source you are viewing is displayed in orange text in the bottom left-hand corner of the OSD.

Press  /  /  /  to select and adjust options, then press **LAST** when finished making adjustments. Press **LAST** to return to the previous screen or repeatedly to exit the OSD.



Volume

Increase or decrease the HDTV speaker volume.

Bass

Adjust low frequency sounds. You can also adjust for bass boost or attenuation.

Treble

Adjust high frequency sounds. You can also adjust for treble boost or attenuation.

Balance

Adjust the sound to the left or right.

SRS TSXT

Turn the simulated surround feature On or Off.

Digital Audio Out

Send digital audio from your HDTV to an external audio system.

- PCM - Select to output audio in 2-channel stereo.
- Dolby Digital – Select to produces 5.1 channel Dolby Digital ® surround sound audio.

Speakers

Turn-off the internal TV speakers when listening to the audio through your home theater system.

Lip Sync

Adjust the audio of the program being viewed so that it matches the movement of the lips of someone talking on the screen.

Auto Volume Level (AVL)

Turns the auto volume level feature On or Off.

Reset Settings

Reset only the audio settings to the factory values without affecting any other settings.

TV Adjusting

Press ◀ / ▶ / ▲ / ▼ to select and adjust options, then press LAST when finished making adjustments. Press LAST to return to the previous screen or repeatedly to exit the OSD.

**Tuner Mode**

Select the Tuner Mode option in the TV submenu to set the tuner mode. Press the right arrow button to select from Antenna and Cable.

Auto Search

Select the Auto Search option in the TV submenu to set the Auto search. Press the right arrow button to adjust the Analog channels and Digital channels.

Skip Channel

Select the Skip channel option in the TV submenu to set the Analog.

MTS

Select the MTS option in the TV submenu to set the MTS. Press the right button to select the Stereo,SAP,and Mono.

Time Zone

Select the Time Zone option in the TV submenu to set the time zone.Press the right button to select the zone among Eastern,Indiana,Central,Mountain,Hawaii,Arizona,Pacific,and Alaska.

Daylight Saving

Select the Daylight Saving option in the TV submenu .Press the right button to select the statue of dayling saving,On or OFF.

Setup

Press the MENU button to activate the On Screen Display (OSD). Select the Setup option to adjust the Language,Source,Sleep Timer,Side,CC,Digital CC Styla, H/V position,and Reset All setting.



Language.

Select the Language option in the Setup submenu to set up the language. Press the right button you can select English, Francais, and Espanol.

Source

Select the Source option in the Setup submenu to set the source mode. Press the right button to change the source TV or Comp.

Sleep Timer

Select the Sleep Timer option in the Setup submenu to set the sleep time.

Wide

Select the Wide option in the Setup submenu to set the Wide

CC

Select the CC option in the Setup submenu to set the CC

Digital CC Style

Select the Digital CC style option in the Setup submenu to set the Digital CC style

H/V Position

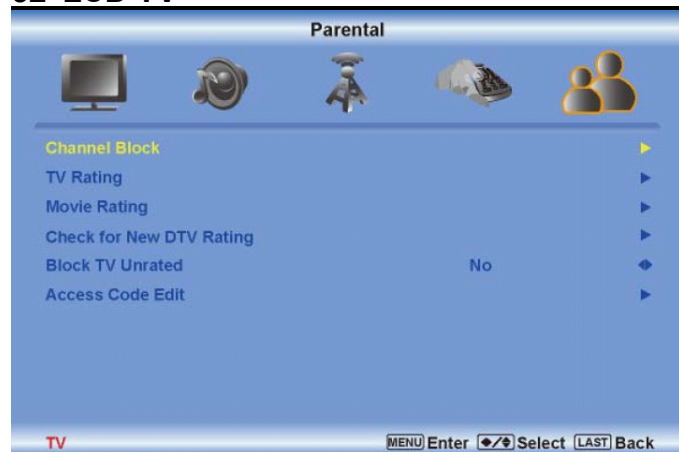
Select the H/V Position option in the Setup submenu to set the H/V Position

Reset All Setting

Select the Reset All setting in the Setup submenu to Reset All Setting

Parental

Press the MENU button to activate the On Screen Display (OSD). Select the Parental option to adjust the Password.



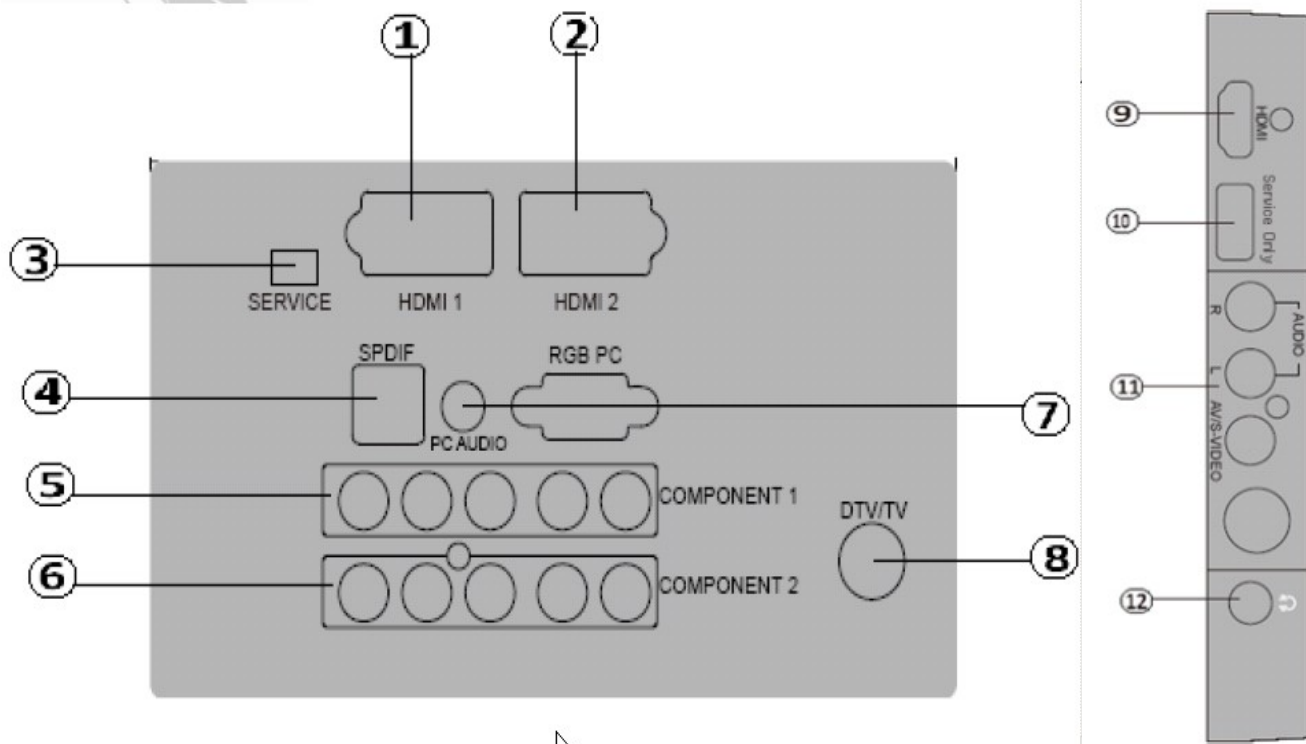
Password

Select the Password Set option in the Parental submenu to set the password for parental control options. Press the right arrow button and the Password panel will be displayed. Enter the four digit password using the number buttons on the remote control. Enter it a second time to confirm you entered it correctly.

Note: If you forget your password, entering 5351 will allow you to set a new password. This feature is not available when HDMI, Component, or VGA is selected as the input source.

2.3 Connector

2.3.1 Rear signal



- Component Video In & Audio L/R In (YPbPr, Cinch, COMP1/COMP2)
- D_SUB in & Phone jack In
- Coaxial aerial I/P (TV input)– F-type (75 Ω)
- HDMI1/HDMI2 In
- Optical SPDIF output

The I/O function is located on TV module, including
Tuner: NAFTA.

HDMI 1: HDMI input (support HDCP) with digital audio

HDMI 2: HDMI input (support HDCP) with digital audio

HDMI Side: HDMI input (support HDCP) with digital audio

AV: CVBS,S-Video (RCA jack) with audio R/L (RCA jack).

RGB : D_SUB with audio R/L (phonejack)

COMP1 : YPbPr component video (RCA jack) with audio R/L (RCA jack).

COMP2 : YPbPr component video (RCA jack) with audio R/L (RCA jack).

SPDIF: Digital audio output (RCA jack)

2.3.2 Side AV

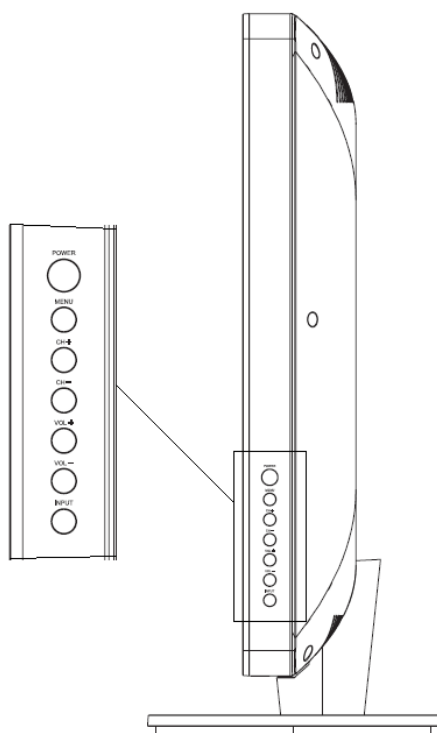
- CVBS In (Cinch AV)
- S-Video In
- Audio L/R In (Cinch)
- Headphones jack output
- USB In (Only update code)
- HDMI side In

2.4 Front Panel Control Knobs



Remote control sensor- this is the window through which all of the remote control signals pass to the sensor. Point the remote control directly at this window for the best response to the remote signal.

Power light- the power light will illuminate with a amber light when the HDTV is powered off, a white light indicates the HDTV is powered ON.

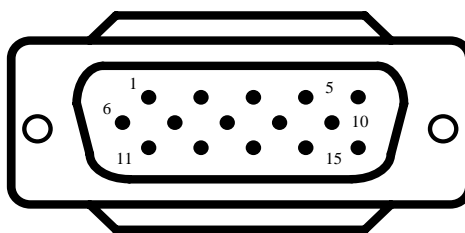


Key	TV/video mode
(Power)	Power on / off
Menu	Enter /Exit OSD menu
"+" (Channel)	Menu Navigate Up/Channel up
"-" (Channel)	Menu Navigate Down/Channel Down
"+" (Volume)	Menu Navigate Right/Increase/Volume up
"-" (Volume)	Menu Navigate Left/Decrease/Volume down
Input	Select the signal source

Status	VizioLED behavior
Normal on	White
Standby	Amber

3. Input/Output Specification

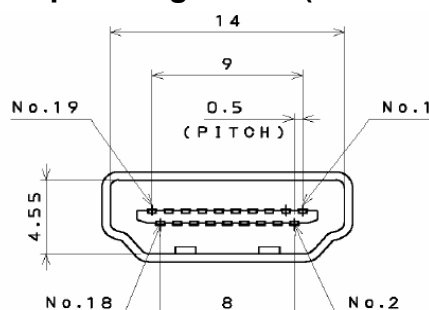
3.1 RGB Signal input



15 - Pin Color Display Signal Cable

Pin No.	Description	Pin No.	Description
1	Red Video	9	Mandatory +5V Supply for PC Bypass
2	Green Video	10	Sync Ground
3	Blue Video	11	SDA(Remote Control)
4	SCL(Remote Control)	12	Bi-directional Data (SDA) for PC Bypass
5	Ground	13	H-Sync.
6	Red Video Ground	14	V-Sync.
7	Green Video Ground	15	Data Clock (SCL) for PC Bypass
8	Blue Video Ground		

3.2 HDMI Digital connector pin assignments(NAFTA only)



Pin No.	Description	Pin No.	Description
1	TMDS Data2+	2	TMDS Data2 Shield
3	TMDS Data2-	4	TMDS Data1+
5	TMDS Data1 Shield	6	TMDS Data1-
7	TMDS Data0+	8	TMDS Data0 Shield
9	TMDS Data0-	10	TMDS Clock+
11	TMDS Clock Shield	12	TMDS Clock-
13	CEC	14	Reserved (N.C. on device)
15	SCL	16	SDA
17	DDC/CEC Ground	18	+5V Power
19	Hot Plug Detect		

3.3 Video input format

Physical Inputs	Format
NTSC from RF	720 x 480 @60i
AV(Side AV: CVBS and Y/C)	720 x 480 @60i
YPbPr	720 x 480 @60i
	720 x 480 @60p
	1280 x 720 @60p
	1920 x 1080 @60i
VGA	720*400//70Hz
	640*480/60Hz
	640*480/75Hz
	800*600/60Hz
	800*600/75Hz
	1024*768/60Hz
	1024*768/75Hz
HDMI (DVI via HDMI)	1360*768/60Hz
	VGA 640 x 480 @60p
	VGA 800 x 600 @60p
	VGA1024 x 768 @60p
	1280 x 720 @60p
	1280 x 768 @60p
HDMI	1360 x 768 @60p
	720 x 480 @60i
	720 x 480 @60p
	1280 x 720 @60p
	1920 x 1080 @60i

4. Mechanical Instructions

1. Remove the one screw to remove the stand base.



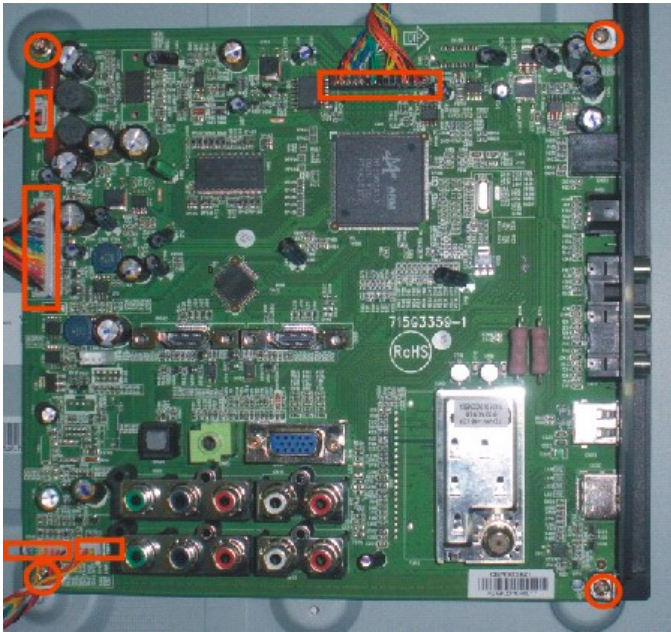
2. Withdraw the stand cover



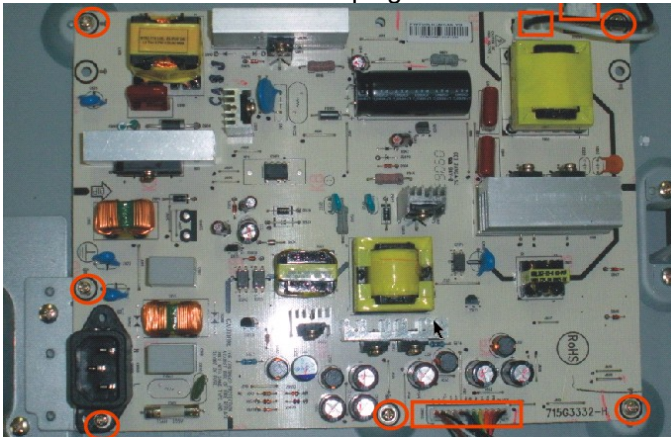
3. Remove eighteen screws to remove the rear cover.



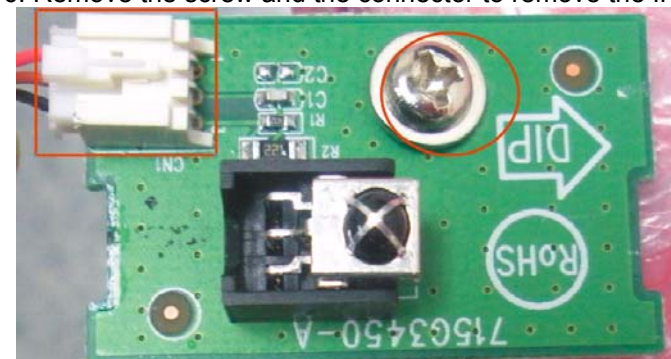
4. Remove four screws and unplug five connectors to remove the scaler board.



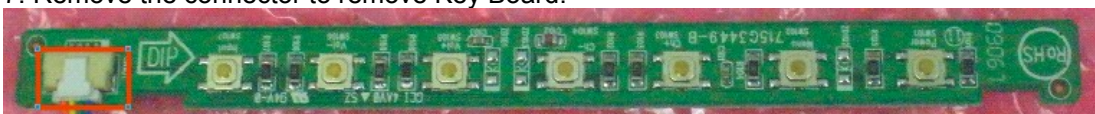
5. Remove six screws and unplug three connectors to remove the power board.



6. Remove the screw and the connector to remove the IR board.



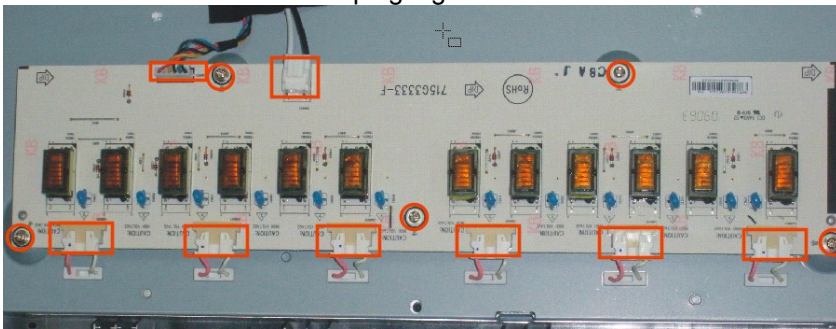
7. Remove the connector to remove Key Board.



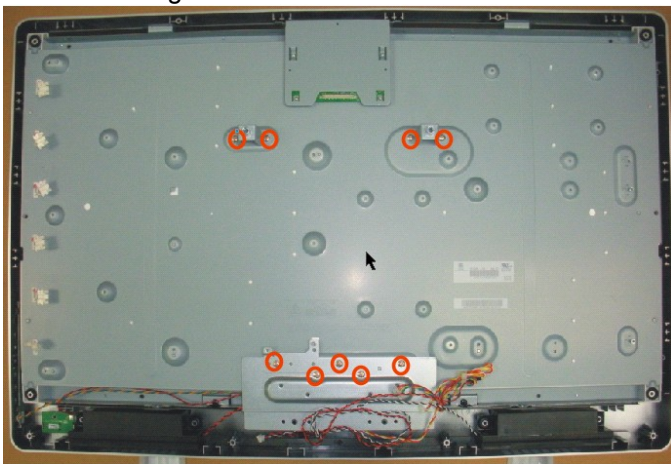
8. Remove four screws to remove two speakers.



9 Remove five screws and unplug eight connectors to remove the inverter board.



10 Remove night screws to remove the metal frame.



11 Remove two screws to remove the bezel assy.

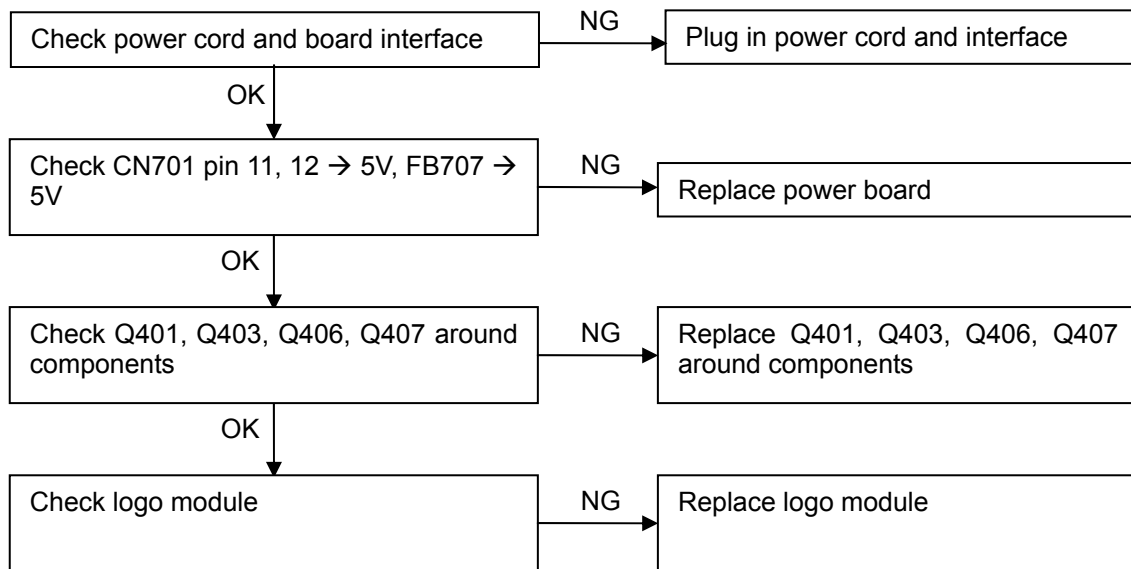


12 the panel

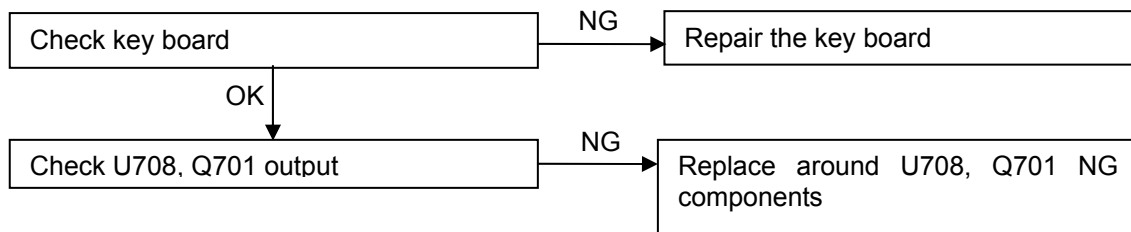


7. Repair Flow Chart

1. No Power (No LED indicator)

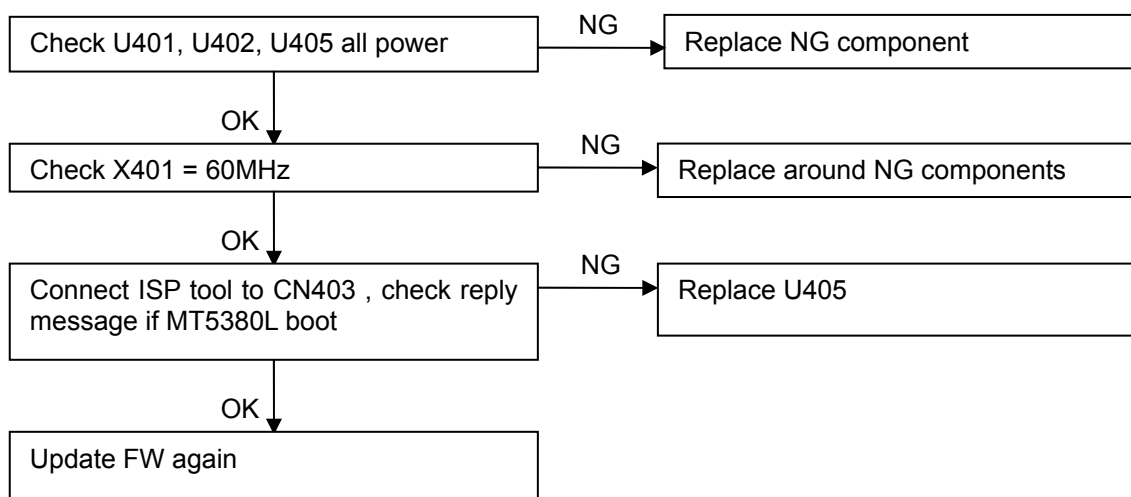


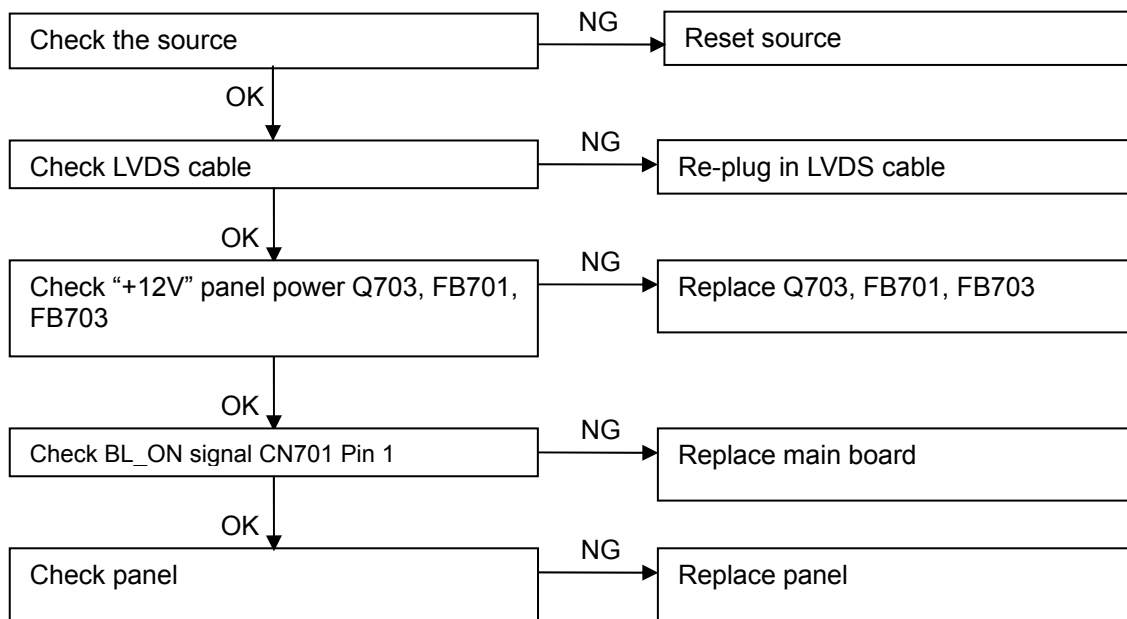
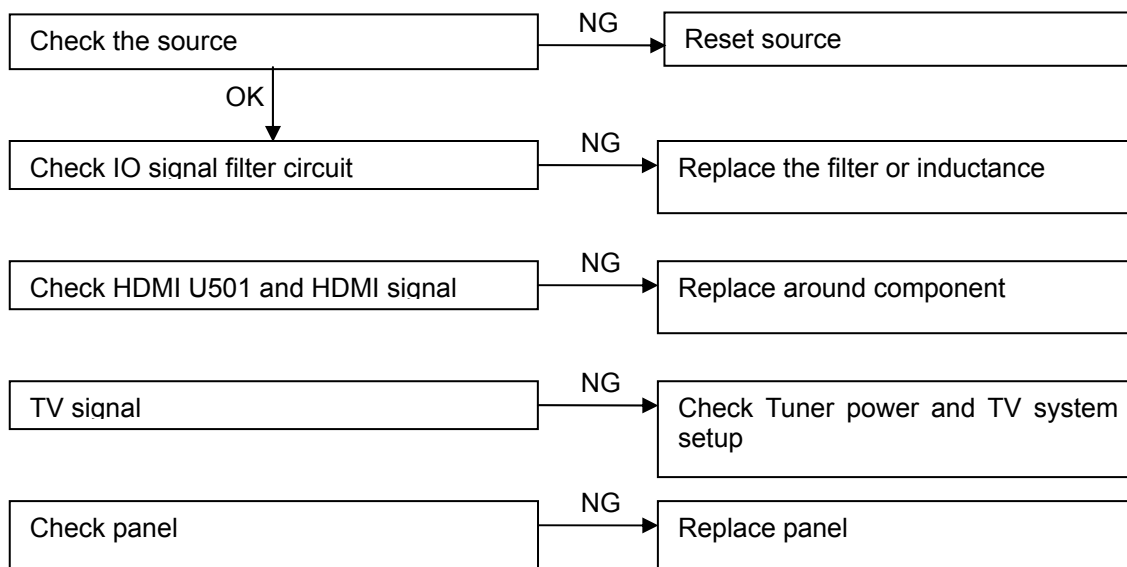
2. Can not start (LED indicator Orange)

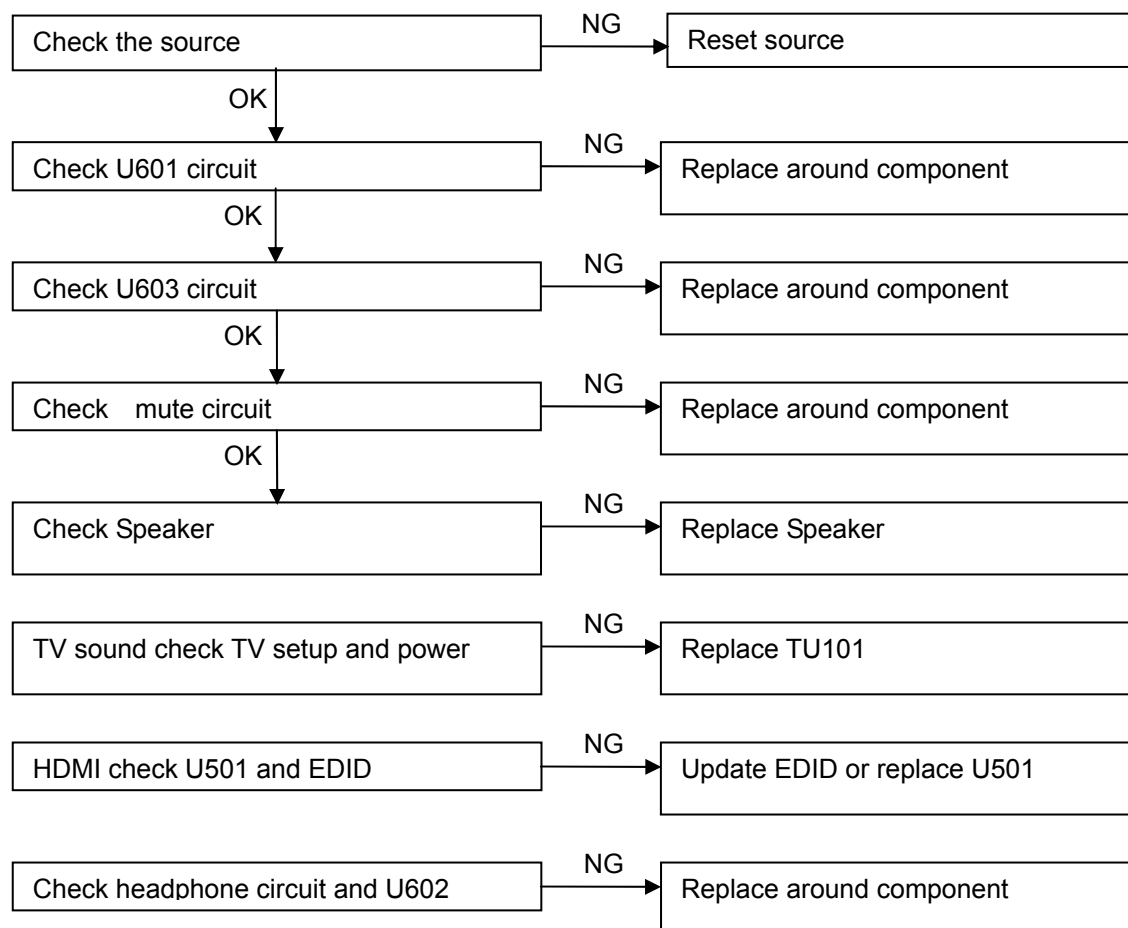


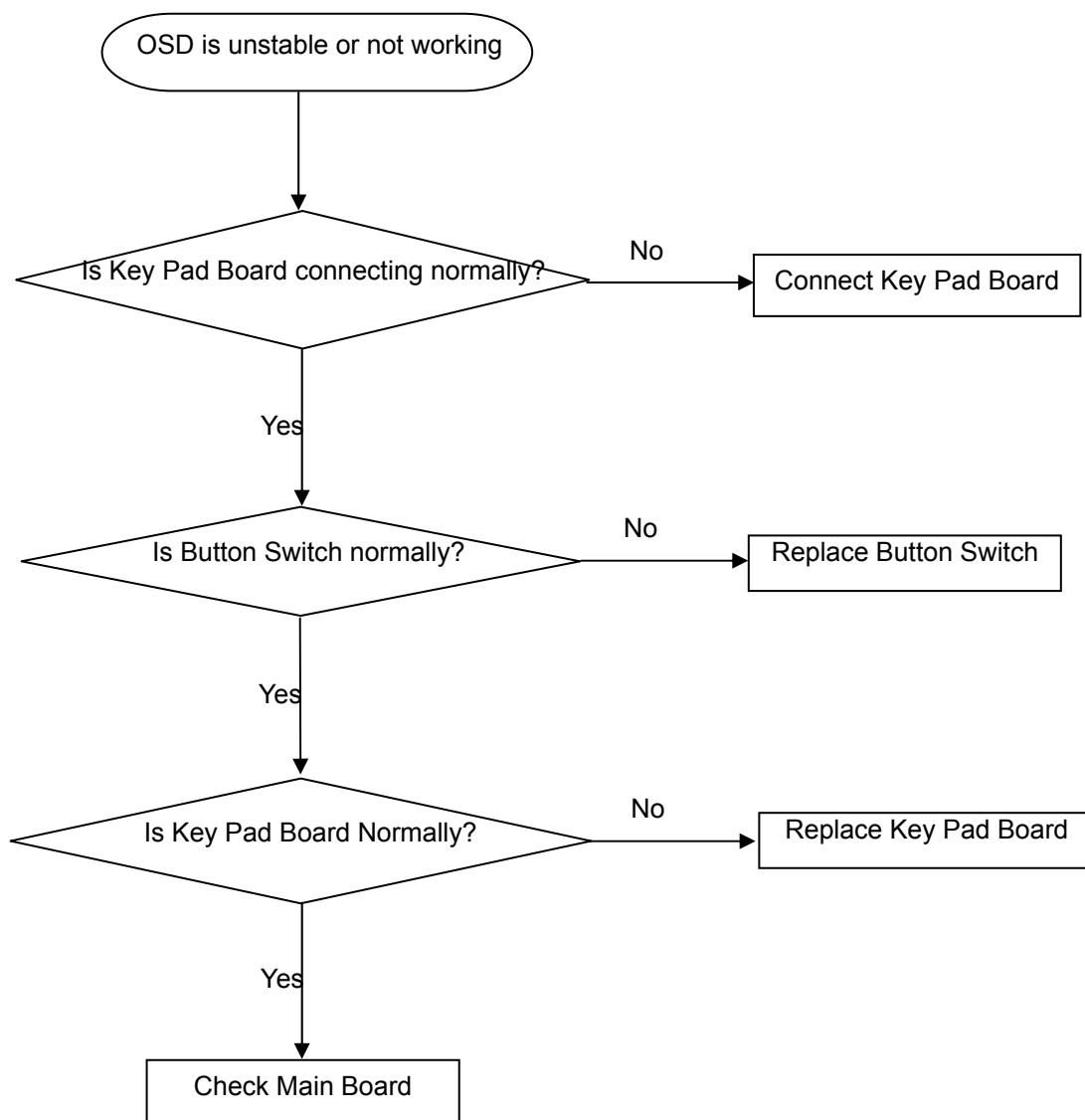
3. No display (LED indicator White)

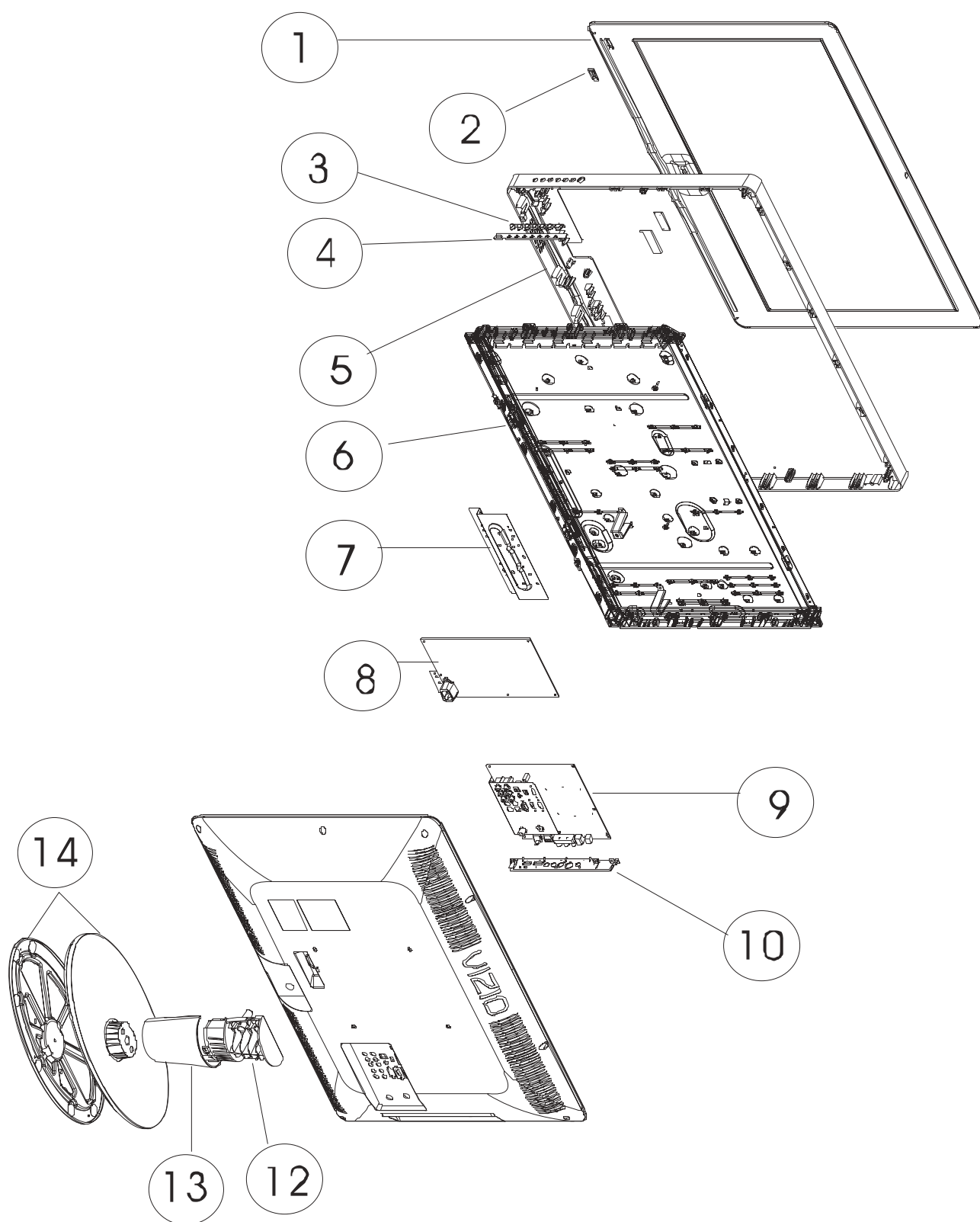
(A)U401 X243 don't work



(B) U401 MT5380L work**4. Abnormal display**

5. No sound





E329M2NkW7VZNNS

MODEL:VA320E

ITEM	18NC	QTY
1	DECO BEZEL	1
2	IR BOARD	1
3	KEY PAD	1
4	KEYPAD BOARD	1
5	BEZEL	1
6	PANEL	1
7	32TV-base-support-g3	1
8	POWER BOARD	1
9	MAIN BOARD	1
10	INVERTER BOARD	1
11	REAR COVER	1
12	STAND	1
13	STAND COVER	1
14	BASE PLATE ASSY	1